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ABSTRACT

The Open University is discussed from the standpoints of problems, the design of the Student Application Form, an analysis of the student's progress, data collection techniques, and the course unit reporting system. Problems discussed include: the devising of an integrated multi-media system suitable for teaching degree-level courses; teaching effectively at a distance; and teaching mature students with a wide range of educational backgrounds, experience, ability, and home situations. Sections of the Student Application Form are presented in figures. A student progress calendar and intervening 'milestones' for 1970-71 and student progress by course are illustrated. Baseline questionnaire data obtained from 77% of the students who registered are discussed and illustrated. A sample of questions on the Report Form on Course Units is provided, and two graphs show the television viewing and radio listening figures for a 10-week period. A histogram shows the average attendance, by course, over all the weeks of the school year, as well as the highest and lowest individual weeks. The average hours spend on each unit over the 10 weeks of the course, for each of four courses (science, humanities, maths, and social science) in 1971, are also shown in histograms. (DB)

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RESEARCH FOR A NEW INSTITUTION: THE OPEN UNIVERSITY

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1 Introduction

In its early stages, the Open University faces a variety of problems for which there are no easy solutions, and for which it must endeavour to find comprehensive and cost-effective answers. It has no precedent, and little existing information to guide it.

These problems include:

> the devising of an integrated multi-media system, suitable for teaching degree-level courses;
>
> the problems of teaching effectively at a distance;
>
> the problems of teaching mature students with a wide range of educational backgrounds, experience and ability, as well as varying home situations.

Each of the problems is daunting in itself. Collectively, they present a formidable challenge.

The resources available for higher education in Great Britain are inevitably limited, although pressure for expansion is great. The Open University provides the possibility of expanding higher education by an amount more than commensurate with its cost. Since the majority of students are in employment while studying, it follows that the net cost to the country is proportionately less.

It is important that this new educational system be adequately evaluated both at the level of effect on the individual student and at the level of total impact on the country as a whole.

If solutions are found to the problems posed by the undertaking, the benefits to this country, and to other less developed countries, will be great.

Procedures are already in hand within the Open University for the accumulation of essential data – both for administrative purposes, and to provide the basic feedback and monitoring necessary for the efficient functioning of the system. These procedures have enabled the University to set up individual student records, course records, tutor and counsellor records, and so on. The University has also financed, within its current budget, a number of individual projects – e.g. to process and analyse the results of computer-marked and tutor marked assignments and to index the success of individual students, tutors, counsellors and course units. Unfortunately, this information will not on its own be sufficient to answer all the problems and questions likely to arise. It will be available, however, for correlation with any information gained through subsequent research and evaluation projects.

2 Constraints of time and money

The University has to operate within limited resources, and within very stringent time-scales. The scale of its operation causes it to resemble at some stages a production plant rather than an academic institution. The budgets are large. The number of people involved is very large. The penalties for bad decisions are very great.

At the same time, existing information is scarce. The degree of uncertainty attaching to some of our early decisions was very high. We are constantly surprised by how accurate some of these decisions proved to be. The University was in the conflicting situation of recognizing the need for information, knowing there was no time to wait for it and also knowing how little money there was available to get it. Academic and organizational demands had to have priority over the needs of research and evaluation. Funding for such ancillary activities, although desirable, had to be sought from elsewhere.

3 Research information from administrative records

3 a) Early hopes of substantial outside funding for a major seven year research project did not materialize, and even before this time the need for close co-ordination with the academic administration of the University was realized. Such basic documents as the student's application form had all to be seen as part of the overall research and information system. Information was sought on this form to enable the University

(1) to make decisions about the actual admissions process;

(2) to discover which applicants were most in need of personal counselling.

A set of algorithmic procedures was devised by Professor Brian Lewis of the Institute of Educational Technology to assist in this process, which in the event in our first year, was used mainly for the second of these objectives, to allocate priorities for counselling. These algorithms looked at such factors as study circumstances, motivation and educational preparedness.

They had one other limited use, which was to control the number of students whom we allowed to commence studying two courses. Some 60 per cent applied to study two courses in our first year, and we allowed only 20 per cent to do so. The constraints on this were financial, the total number of course places we could afford.

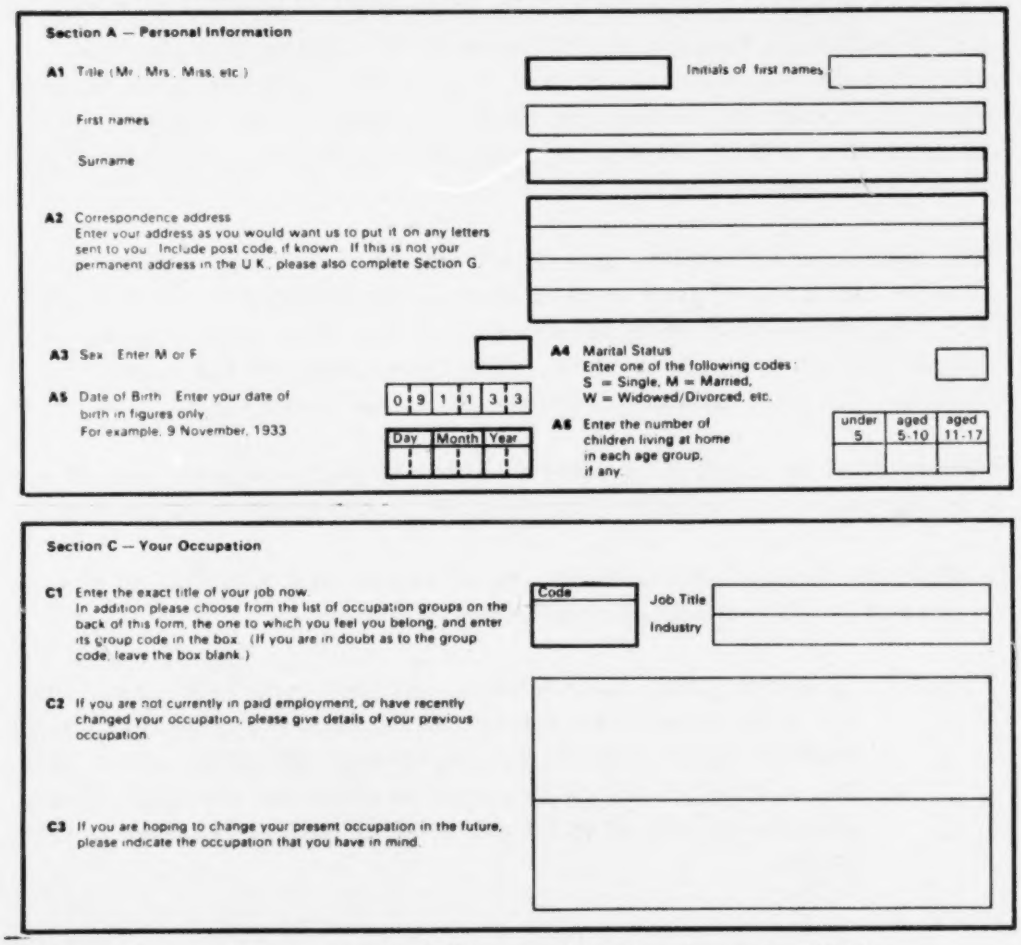
Realism has set in for 1972 and only about 26 per cent have applied to do two courses, of whom we have offered places to about 20 per cent.

In designing the application form, the Admissions Committee of the University faced two sets of conflicting problems:

(1) That this form, the key piece of paper seen by the applicant, had to be viewed against the background of our public commitment to 'open' entry to the University, but at the same time had to give us enough information about the students' backgrounds to help us in the procedures outlined earlier in this paper.

(2) It had to be clear, unambiguous and motivating for the applicant, but at the same time had to be available both for immediate microfilming for the records, and translation on to punch-cards, since the admissions process of necessity, owing to its time scale and volume, had to be computerized.

Examples of two sections A and C, of the application form for 1972 follow. Occupational categories, for example, are a particularly thorny problem. The University does not have the resources to post-code these. We therefore devised groupings which we listed on the back of the application form, with examples, and into which we asked applicants to place themselves. In addition we asked them for their job title etc. Testing out these groups showed a high degree of correct self-completion. The groups finally arrived at are designed to admit of overall comparisons with the Registrar General's Occupation Orders.



Section A — Personal Information

A1 Title (Mr., Mrs., Miss, etc.) | Initials of first names

First names

Surname

A2 Correspondence address
Enter your address as you would want us to put it on any letters sent to you. Include post code, if known. If this is not your permanent address in the U.K., please also complete Section G.

A3 Sex. Enter M or F

A4 Marital Status
Enter one of the following codes:
S = Single, M = Married,
W = Widowed/Divorced, etc.

A5 Date of Birth. Enter your date of birth in figures only.
For example, 9 November, 1933

0	9	1	1	3	3

Day	Month	Year

A6 Enter the number of children living at home in each age group, if any.

under 5	aged 5-10	aged 11-17

Section C — Your Occupation

C1 Enter the exact title of your job now.
In addition please choose from the list of occupation groups on the back of this form, the one to which you feel you belong, and enter its group code in the box. (If you are in doubt as to the group code, leave the box blank.)

Code | Job Title | Industry

C2 If you are not currently in paid employment, or have recently changed your occupation, please give details of your previous occupation.

C3 If you are hoping to change your present occupation in the future, please indicate the occupation that you have in mind.

Figure 1 Sections A and C of the application form for 1972

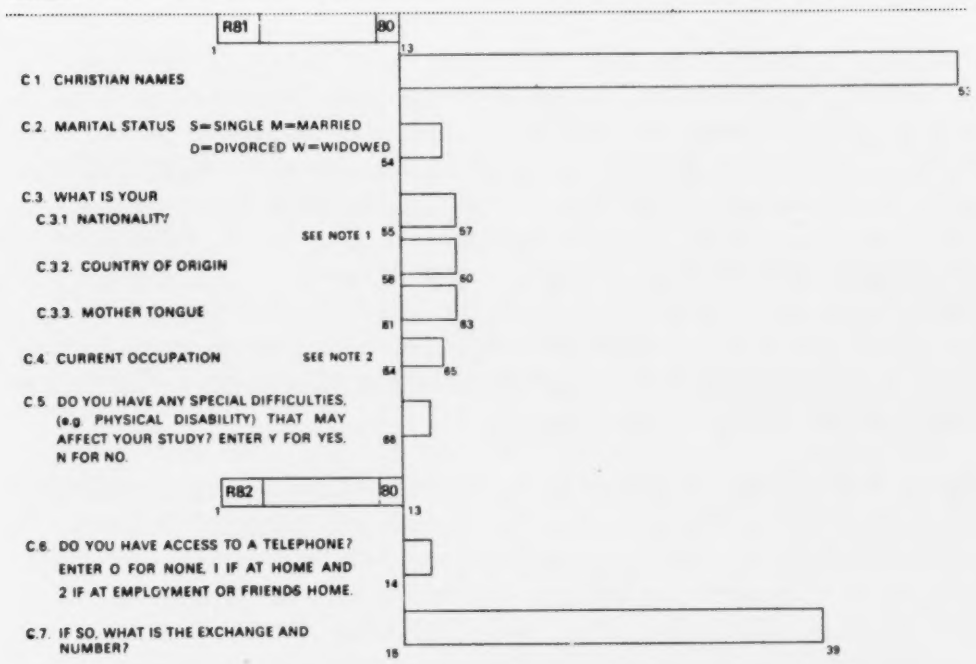


Figure 2 Section C of the student registration form 1971

3b) The second key administrative document, which is also an integral part of the overall research plan, is the student registration form. Students fill this form in as they accept their place and pay their 'provisional' registration fee of £10 in October. This form, as well as updating the administrative records, contains two main areas of information: (1) possible predictors of student difficulties; (2) more detailed information about the student's personal and educational background.

This information had to be limited, for resource and space reasons, to data considered essential. Of course what administrative staff and academics consider essential will not necessarily coincide with what researchers consider essential. Suffice it to say that after much argument the information so obtained forms a basic part of the student record file for all students, and as such provides a very solid database for all subsequent projects.

A section of this form is shown here. Again the form had to be designed for self completion and immediate punching for data processing.

4 Why did we adopt this strategy?

A major objective of the Open University was, and is, the extension of educational opportunities. To be more specific, it is to offer degree-level courses to adults who would not otherwise be able to pursue such courses. Unfortunately, the mere provision of a new educational opportunity is not enough. The Open University cannot by its mere existence, and on its own, put right the inadequacies of decades of educational disadvantages. Potent factors militate against certain categories of people being able to grasp new opportunities opened to them. In addition to offering new opportunities, we have to search out those factors which have prevented such people from taking advantage of educational opportunities offered in the past.

Unless this is done, and done early, the very factors that prevented people from benefiting from earlier educational opportunities may ensure that they are unable to embark on an Open University course, or to see it through to completion. In this case, the University will have failed to achieve one of its main objectives, and the personal and psychological cost to many individual students will be great. We considered, consequently, that there was an urgent need:

(a) to identify those factors that had prevented students from taking advantage of previous educational opportunities;

(b) to identify current difficulties in the environment and in the University's study arrangements that might impede the full utilization of the new opportunities offered;

(c) to identify resources that might assist the learning process, and

(d) to distinguish difficulties which were remediable by the University from difficulties which were not.

Our first priority, therefore, was to endeavour to identify such possible difficulties. At the same time we considered that just because the University has no formal entrance qualifications, it was important for us to know something of the previous educational experience of our students.

Another section of the student registration form, then, asked in greater detail about the students' previous educational experience, both full and part-time, but only <u>after</u> they had already been offered a place.

SECTION D - FOR RESEARCH PURPOSES, WE WOULD LIKE SOME INFORMATION ON YOUR EDUCATIONAL BACKGROUND. PLEASE COMPLETE THIS SECTION USING THE NOTES FOR GUIDANCE.

D.1. TYPE OF SCHOOL LAST ATTENDED	SEE NOTE 3	R80 1 80 13 14
D.2. WHAT LEVEL OF EDUCATION HAVE YOU ATTAINED?	SEE NOTE 4	15
D.3. IF YOU HAVE OBTAINED ANY FORMAL EDUCATIONAL QUALIFICATIONS.		
D.3.1. WHO WAS THE EXAMINING BODY?	SEE NOTE 5	16 17
D.3.2. WHAT WERE THE SUBJECTS OF STUDY?		18 19
D.4. HAVE YOU EVER TAKEN ANY PART-TIME COURSE OF STUDY? IF SO PLEASE GIVE DETAILS.	SEE NOTE 6	20 21 22
D.5. PLEASE GIVE THE CODES (UP TO THREE AS APPROPRIATE) OF THE GROUPS WITHIN WHICH ANY PROFESSIONAL BODIES OF WHICH YOU ARE A MEMBER ARE LISTED, INDICATING LEVEL OF MEMBERSHIP. IF MEMBERSHIP WAS OBTAINED BY <u>SOCIETY EXAMINATION</u>, ENTER 1 IN THE APPROPRIATE "EXAM" BOX	SEE NOTE 7	BODY LEVEL EXAM 23 24 25 26 27 28 29 30 31 32 33 34

<u>Figure 3</u> <u>Section D of the student registration form, 1971</u>

The initial resource commitment to fund this level of research activity as part of the basic information system was made by the University at an early stage and clearly it provides our necessary minimum monitoring and information flow.

5 The monitoring of the system

Turning now to the student, and it is the student-based research for which I am responsible and to which I am addressing myself in this paper. it is necessary to analyse in some detail the student's progress through the University system. (Other research is being carried on by my colleagues into the tuition and counselling system, effectiveness of the media. developmental testing etc.).

This analytical process has to start even before the student enters the system. An interesting category of students known particularly to those involved with part-time and correspondence education is the category of what has come to be known as 'non-starters' – those people who apply, sometimes even pay their fee and then do not study at all. The very act of registering appears to fulfil for them some need.

For planning purposes, it is important to isolate this group and try to eliminate it, since it represents at minimum

(a) a personal cost to the student;

(b) a financial cost to the University;

(c) a disadvantage to an unknown rejected student who might successfully have entered the system.

Looking at the planning of the Open University year, then, it is possible to discern milestones in a student's progress through the system. The calendar on page 40 charts these milestones, although perhaps it would be more appropriate to call them hurdles or even obstacles.

At each event, the student either remains in the system or leaves it for a variety of reasons. The characteristics of students who leave at each point, and their reasons for leaving require close monitoring and a regular statistical analysis has been planned to produce this.

Predictions in our first year, of necessity, were 'pragmatic' or 'intuitive'. One early problem, which although we did foresee, we could not allow for was the size of the group of 'non-starters'. Unlike airlines or the Dover-Boulogne ferry, with our limited resources we could not risk over-booking.

In the event, some 5,000 of the students who had applied and to whom we had offered places did not pay their provisional registration fees, and other students from the reserve list were therefore offered a place instead. The figure for this year is much the same, so clearly this is a noise in the system that requires early attention.

Looking at the calendar in more detail, I want at this stage only to comment on parts of it. The first and very important point to make is that we planned the University year and allocated its resources to allow the students a provisional registration period of three months, (extended to four months in 1971 because of the postal strike) for which they paid an initial ten pounds, to give them a chance to try out this new educational experience to see if it was suitable for them, and to see if they could fit it in with their other commitments. This was a crucial part of our planning – not just because we were catering for a heterogeneous group of adult students who had chosen to study in a new way, but also because it enabled us to concentrate the bulk of our financial resources on what we call our 'final' students, those who paid the final registration fee after three months of study with us. Existing available evidence, such as it is, on part-time or correspondence study at university and other levels, indicates that wastage is particularly heavy in the early stages of a course. It is clearly important to do all that we can to support students in this provisional registration period, but it is equally important to minimize the expenditure on students who are not going to continue for reasons that have nothing to do with the University.

Date	University requirement	Number in system	Reasons for leaving system	Number out of system	Cause of withdrawal
PRE-ENTRY					
16.8.70	End of applications		Not offered place		
	Final payment date for provisional registration – £10		Did not pay / Not heard from		
Nov/Dec	Additional offers made from reserve list				
9.12.70.	No. of students fully paid up		Do not start		
ON ENTRY					
1. 10.1.71.	No. provisionally registered – at start of academic year		Do not start		
2. 15.2.71.	-		Notified withdrawals		Reasons
3. 8.3.71.	-		Notified withdrawals		Reasons
4. 8.3.71.	Demand for final registration – £10				
8.4.71.	Qualified for final registration		Not qualified for final registration		Non-payment of fees / Non-completion of assignment
5. 18.4.71.	Finally registered students				
6. 31.5.71.	-				
30.6.71.	Due date for summer school fees				
7. 6.7.71.	Paid summer school fee or given exemption		Failure to attend or be given exemption		Non-payment / Payment – non-attenders
8. 1.8.71.	-				
9. 1.9.71.	-				
10. 30.9.71.	No. of students attending summer school				
11. 31.10.71. 1/2.11.71.	End of tuition Dates of exams				
12. 21.11.71.	No. sitting final exam		Did not sit exam.		Not eligible for credit
13. 4.12.71.	Sat exam. eligible for credit		Sat exam. not eligible for credit		Re-entry / Withdrawal
14. 14.12.71.	Results of exams.				
	Took 2 passed 2 Took 1 passed 1		Took 2 passed 1 Took 1 passed 0		Took 2 passed 0

Figure 4 Student progress calendar and intervening 'milestones' 1970-71

Our baseline figures for all our pass rates therefore are our final registration figures. The overall figure of credits for courses based on our final registration figure was 75.3 per cent.

The following graph shows student progress from the point of final registration, past the hurdle of summer schools, through to gaining course credits. The patterns, as you will see, vary from course to course. Some information I shall be discussing later on may give some pointers to reasons for this.

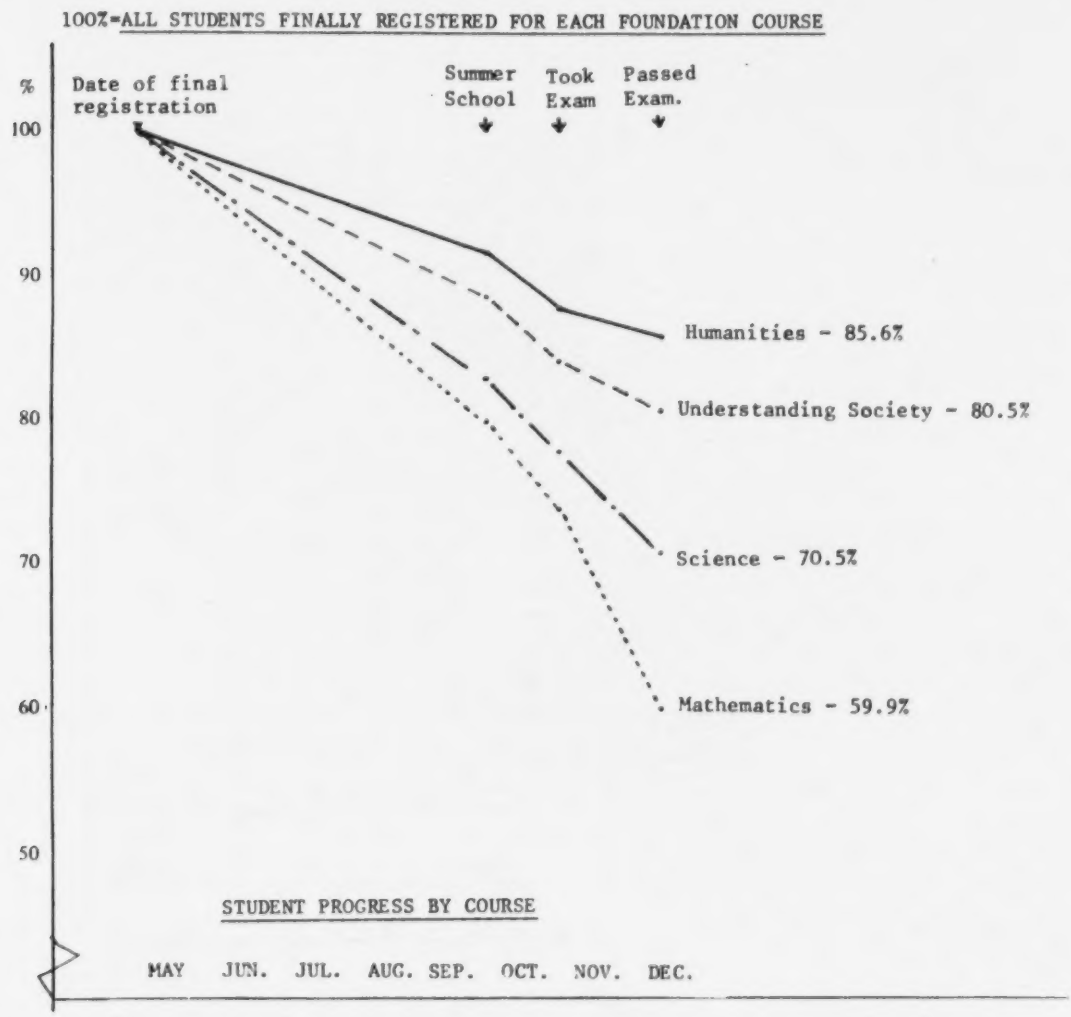
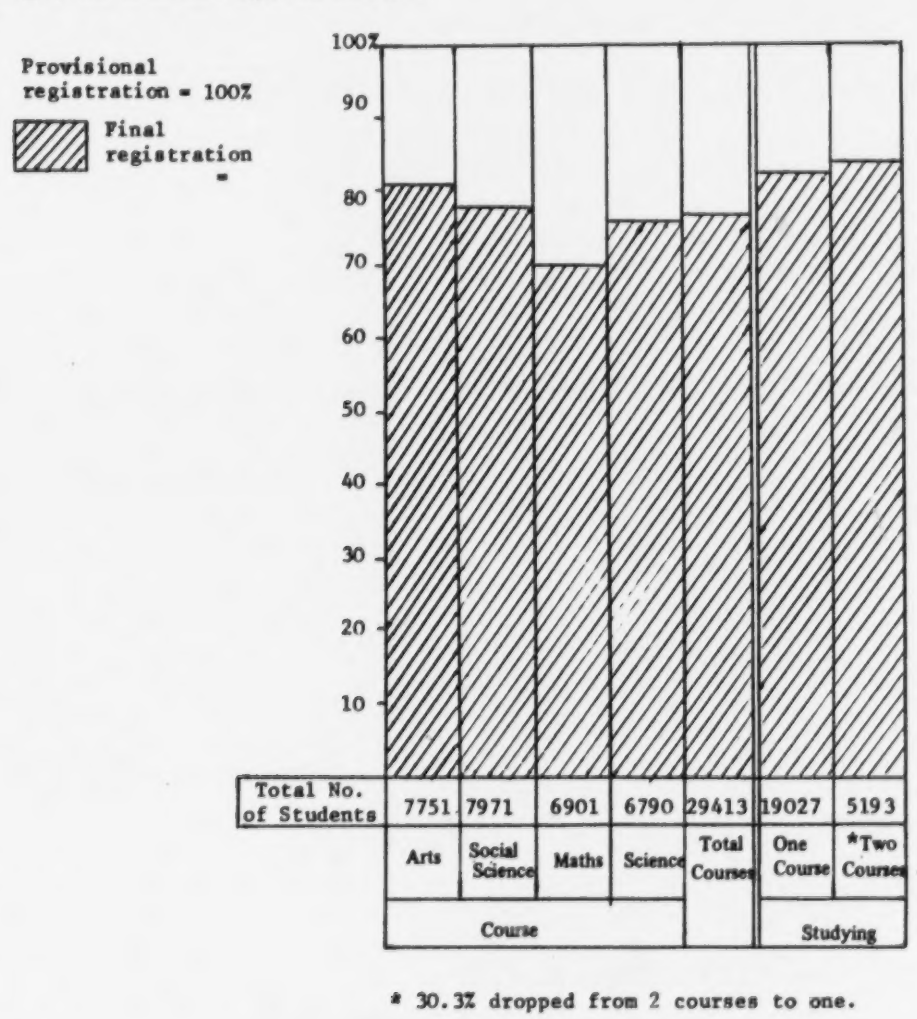


Figure 5

6 Provisionally registered students

Coming back to the 'provisionally' registered students – a very significant group for planning purposes – some clear differences have emerged between those groups who 'finally' registered and those who did not. Overall, 80.8 per cent of our 'provisional' students finally registered. The variation between courses was already marked at this stage, as this histogram shows.



* 30.3% dropped from 2 courses to one.

Figure 6 Provisional and final registration shown by faculty and number of courses studied

A large number of students who had started to study two courses preferred to drop one of them and concentrate their studies, rather than leave the University altogether. 30 per cent of students who started studying two courses had dropped to one course by 7 May. Part of this drop was undoubtedly caused by the award of credit exemption to some students, but in the main it reflects the sheer work load involved in two courses.

I have time here for only a couple of detailed examples. One is not necessarily surprising, but is clearly significant. Of the nearly 2,000 students whose mother tongue was not English, significantly fewer (61 per cent) finally registered. Marginally more women continued with their studies — a slight move to redress the imbalance of the sexes at the start of the year. Another trend, although not probably significant at this stage, was the fact that older students continued at a slightly higher rate than the younger ones. This is clearly an important trend to watch, particularly with the Government's suggestion that the Open University should accept qualified school-leavers. One final characteristic will be of particular interest and cause for congratulation to those at the BBC and the National Extension College who prepared and produced the preparatory or Gateway courses for the Open University. 91.9 per cent of all students who provisionally registered with the Open University having previously taken preparatory courses continued on to final registration. This compares with a figure of 72.5 per cent for those with no previous experience of part-time education at all.

7 Longitudinal studies of Open University students, their educational and occupational background and their progress through the system

So far, so good, – but the information flow discussed so far only meets short term objectives. In order to evaluate the impact and effectiveness of the Open University as a whole, one needs to set up criteria against which to judge it. These criteria could be absolute ones, in terms of the value of the University to the individual student, and to society. Alternatively, they might be relative criteria, making comparisons, for example, with alternative methods of higher education. In this area problems of definition for the purpose of valid comparisons become acute.

It is beyond the scope of this paper to do justice to this problem. Suffice it to say that it is one that is exercising our minds considerably, as. I suspect. it is the minds both of other educationalists and politicians.

a) To complement the information the University is gathering, the SSRC has funded the start of a long-term project, directed by myself, which is designed to follow the progress of the first generation of students through the University. This project has already started with an initial questionnaire to <u>all</u> students as they began their studies, covering, in some detail, their educational and occupational backgrounds, their work and leisure patterns and their future plans.

The Open University expects its students to spend ten to twenty hours a week on study, over a period of three to six years. Most of these students are doing a job as well as studying with the University. A commitment to study on this scale is likely to shape, and also to be shaped by, other major areas of the students' lives, notably their work, their family life and their leisure. In order to obtain a degree, changes and sacrifices will almost certainly have to be made by individuals both in their work and in their leisure. They may have to forego promotion, for example, or give up special interests.

Open University students need to structure their non-work time in very specific ways. Time previously available for leisure or family life may have to be re-allocated to study – in particular to serious reading and to disciplined television viewing and radio listening, or to spending time on home experiments! Previous reading, viewing, listening and social habits may have to be broken. The Open University is asking its students to change previous patterns of leisure and media consumption. In many cases, students' families also have to make adjustments and sacrifices; and there may be significant repercussions within the family group.

There will clearly be an interaction between study habits and patterns of life, including patterns of work. The areas of work and non-work, leisure, and social and family life are so fundamental and so interrelated that it is desirable to integrate them into one study.

The initial questionnaire, funded by the SSRC, covers these areas and in addition includes a detailed section on occupational and social mobility and will tell us much about the social class of our student population – a subject that has been the cause of much speculation in the press. I would here repeat the point, made before, but not taken by some people, that to make valid comparisons with existing students what we need to know is the occupation of our students' parents at the time when our students would normally have started on higher education. That is how students are classified conventionally – by their father's occupation.

This information will be available shortly – but, as you all know, any social class analysis, dependent as it is on variations of occupational and other analyses, is a time consuming game, and open to much question and discussion – yet another paper!

b) Initially, we decided to gather base-line data about all students, and to cast our informational net wide and shallow rather than narrow and deep. To this end, we may have had to gather more data than seems initially to be justified, so as not to pre-judge what are and what are not the critical factors in the learning process. It is impossible at this stage to know which students, groups of students and types of learners will adapt and progress, or fall out early, or fall out late. Much post hoc analysis will need to be done of significant groups which emerge at later intervals in the learning process. A unique opportunity would have been thrown away if inadequate baseline data about these students had not been obtained before they started their studies.

The first stage of this project could not be planned to test specific hypotheses. It has had to be planned to provide a firm basis on which specific hypotheses could later be tested.

Built into this first stage also are a number of sub-studies designed to look at, in detail, the most urgent problems facing the University in its early years, for example the factors affecting students who decided not to 'finally' register.

A questionnaire has already been sent to a sample of students who did not finally register to discover the problems they faced, the reasons that caused them to withdraw and above all to discover what in all this was within the control of the University and what was not.

The baseline questionnaire, previously referred to, runs to 14 pages and 65 questions and cannot be included here in full.

It has, as with the application form, to be clear and unambiguous and motivating for the student. It has to answer short and long-term informational needs. An immediate early problem was the scheduling of broadcast times. Included here is one question asked on this topic and two graphs derived from our earlier research into BBC/NEC Preparatory courses which shows quite clearly the points in the morning and evening at which we can count on students being, at minimum, at home, even though they may have other calls on their time (Figures 8 and 9).

19. What <u>would</u> be: (a) the most convenient days and times for the broadcasts for <u>you</u> and (b) which you would, as far as you can say, find impossible. (Ring all that apply.)

	(39 – 40) Most convenient	*(41 – 42)* Impossible
Weekdays:		
Before 9.00 a.m.	1	1
9.00 a.m. – 1.00 p.m.	2	2
1.00 – 4.00 p.m.	3	3
4.00 – 5.30 p.m.	4	4
5.30 – 6.30 p.m.	5	5
6.30 – 7.30 p.m.	6	6
7.30 – 9.30 p.m.	7	7
9.30 – 11 30 p m	8	8
11.30 p.m. or later	9	9
Don't mind what time	V	
Weekends:		
Before 9.00 a.m.	1	1
9.00 a.m. – 1.00 p.m.	2	2
1.00 – 4.00 p.m.	3	3
4.00 – 5.30 p.m.	4	4
5.30 – 6.30 p.m.	5	5
6.30 – 7.30 p.m.	6	6
7.30 – 9.30 p.m.	7	7
9.30 – 11.30 p.m.	8	8
11.30 p.m. or later	9	9
Don't mind what time	V	

Figure 7 Extract from baseline questionnaire

Other sections of the baseline questionnaire will give us indicators of occupational attitudes, leisure activities, motivation etc. Questions 39 and 58 show examples of the types of closed-end questions used (Figure 10, page 48). Open-ended questions were also included. Constraints of time and money dictated a two stage strategy of analysis. A one in four sample of all questionnaires has been coded and punched for early analysis. The remainder are being banked for the future when resources permit their use.

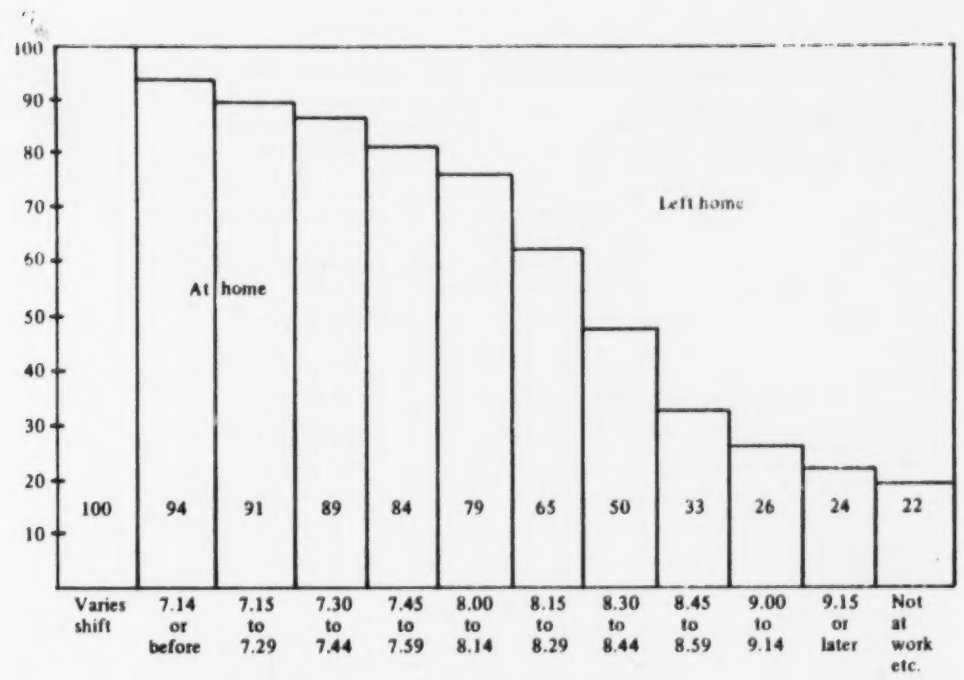


Figure 8 Time of leaving home in the morning

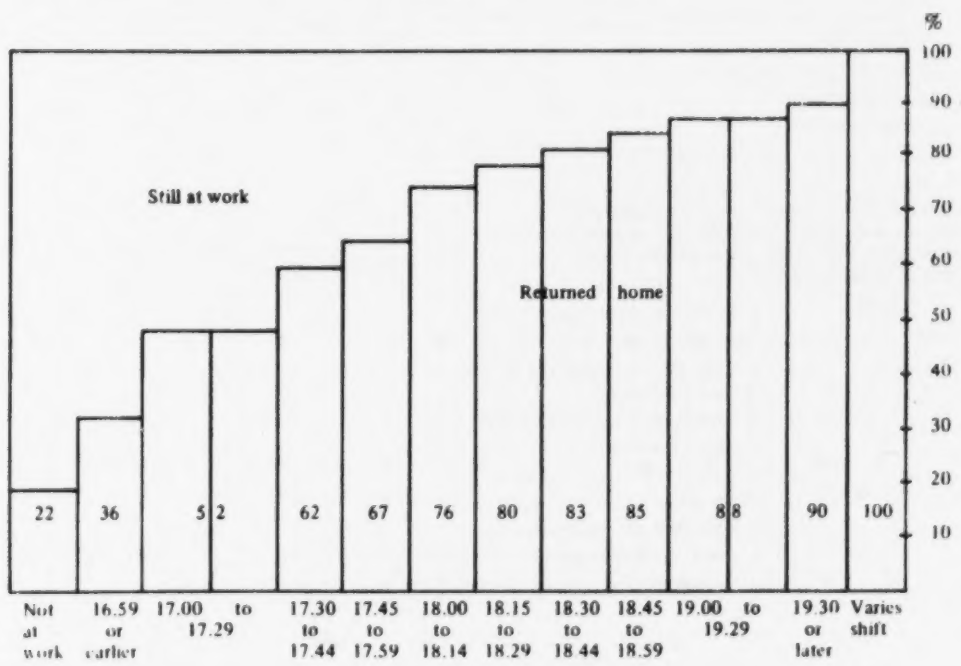


Figure 9 Time of returning home in the evening

39. Here is a list of different things that people consider are important to them about their work.

(a) How important is each one of these to you in relation to your work? Please answer this even if you are not working at the moment. (Please go down the list and mark an answer for each one.)

(b) How satisfactory is your present job with respect to each of these factors? (Mark an answer for each one.)

	(a) Importance in relation to your work			(b) Satisfaction of present job			
	Very important	Fairly important	Not very important	Very satis-factory	Fairly satis-factory	Not very satis-factory	
Pay	1	2	3	4	5	6	
Hours of work	7	8	9	0	X	V	(45)
Security	1	2	3	4	5	6	
People I work with	7	8	9	0	X	V	(46)
Interest of work	1	2	3	4	5	6	
Opportunity to use skills, training	7	8	9	0	X	V	(47)
Variety of work	1	2	3	4	5	6	
Responsibility	7	8	9	0	X	V	(48)
Can take own decisions	1	2	3	4	5	6	
Near home	7	8	9	0	X	V	(49)
Conditions of work	1	2	3	4	5	6	
Respect for employer	7	8	9	0	X	V	(50)
Opportunity to get ahead quicker	1	2	3	4	5	6	
Opportunity to work with people rather than things	7	8	9	0	X	V	(51)
Opportunity to be helpful to others and to society	1	2	3	4	5	6	
Other (please write in) ———	7	8	9	0	X	V	(52)

58. What sort of things seem important to you personally? Here are some things other people have said are important to them. Would you say whether any of these things are important to you?

	Very important	Fairly important	Not important	Don't know	
(a) To have a job which you like?	1	2	3	4	(70)
(b) To be earning good money?	5	6	7	8	
(c) Passing examinations and getting qualifications?	9	0	X	V	
(d) Helping other people?	1	2	3	4	(71)
(e) Travelling and seeing different countries?	5	6	7	8	
(f) Playing a significant role in the community?	9	0	X	V	
(g) Seeing friends?	1	2	3	4	(72)
(h) Your family?	5	6	7	8	
(i) Getting married or being married?	9	0	X	V	
(j) Getting out in the evenings?	1	2	3	4	(73)
(k) Religious observance	5	6	7	8	

Figure 10

c) Methods of data collection employed

The universe to be sampled and the nature of the information to be sought pose particular problems for the researcher attempting to decide among alternative forms of data collection.

The geographically scattered sample, the size of the student population and the longitudinal nature of the study would make the cost of personal interviewing very high. On the other hand response rates to postal questionnaires are variable, depending on the nature of the population and the subject under study. At first sight, the information that we are seeking may look too complex to be safely and validly collectable via postal questionnaires. Nevertheless, we have decided to use postal questionnaires for the majority of our studies, on the following grounds:

(1) the organizational structure of the Open University virtually guarantees a higher-than-usual response rate. Respondents who are highly motivated to follow a course, which is itself based mainly on the use of the postal system, respond well to this approach, provided that the questionnaires are carefully designed, and are administered with sensitivity. Above all, students need to be brought into the confidence of the researcher and kept informed about the results of the research and the uses to which it is being put. This we are doing.

(2) As a further guarantee of high response rates, our administrative system maintains a constantly up-dated mailing list, and we also have an easily invoked system of postal or mass media 'reminders'.

(3) evidence from our previous University research into the BBC/NEC preparatory courses shows that questionnaires, administered to similar students following similar multi-media courses, produce response rates of 75-90 per cent.

(4) we wished to obtain baseline data on all Open University students and the cost of personally interviewing such numbers would be prohibitive.

We have the resources, in addition, to make personal interviews with selected samples of Open University students for piloting purposes and to verify the reliability of the data. Telephone interviewing is also proving useful.

d) Response rates

The mailing of our baseline questionnaire hit the researcher's nightmare, the postal strike of last spring. We despatched 24,000 odd questionnaires the week before it started and received 5,000 back by that first week-end. We then had to wait in agonized suspense wondering how many had been thrown away, hidden in cupboards or just lost.

Extraordinarily enough, completed questionnaires are still arriving. By 1 May we had received questionnaires from 61 per cent of all students. We then sent out reminders in June. The current response rate is now 69 per cent over all students who started with us in January 1971.

The significant fact, which confirms my previous comments about the characteristics of our 'provisional' students, is the difference between the response rates of those students who finally registered and those who did not.

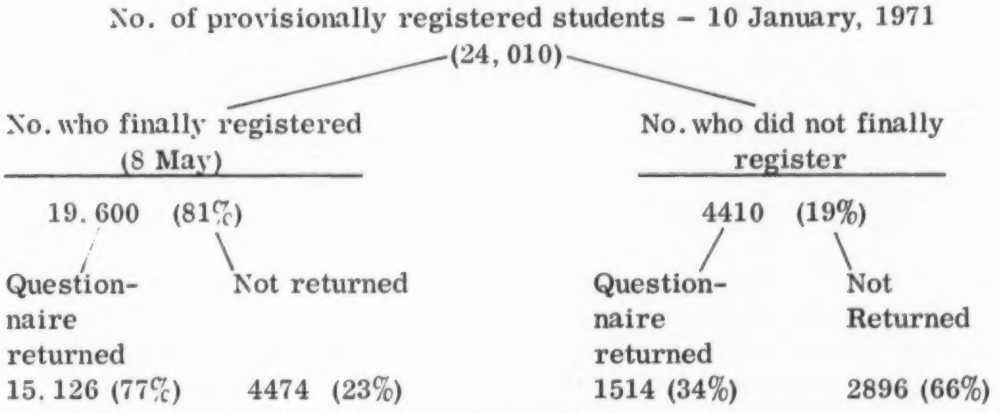


Table 1 Summary of response rate on baseline questionnaire (SSRC)

A response rate of 77 per cent for all students who finally registered is clearly satisfactory. The comparison with the response rate for those who did not finally register (only 34 per cent) is fascinating. A unique early predictor of student withdrawal!

We have in addition the possibility of checking the characteristics of non-respondents from the comprehensive information already described on our student records.

We are also encouraged by the response rates for what we have called the 'drop-out' study – these are our 'provisional' students who did not finally register. We wrote to them only in October, but as many as 63 per cent who had previously completed the baseline questionnaire replied, and 47 per cent overall – a reasonable figure for a most difficult group.

8 The course unit reporting system

We have carried out numerous ad hoc projects during the year, at the request of individual faculties or departments and funded out of their own budgets, which included, for example, a questionnaire to social science summer school students, a questionnaire to arts students about the logic component of their course etc.

In addition one other major project has occupied us. This project, which services all the sections of the University, is a regular reporting system that we have devised to monitor the way in which the students are studying and are reacting unit by unit to the course materials.

A sample of one in three of all students formed a reporting panel, starting the year with a pad of report forms, one for each course unit, and sending them in at intervals over the year. We have experimented this year with an advanced optical reading system which allows the student simply to underline in pencil their answers, with the minimum of effort. We have been able to feed information back to the faculties within a few weeks of the students' studying the unit, and in time for the academic 're-make' teams to utilize the information in their planning for 1972. (Although every foundation course is designed to run for four years, each faculty has the resources to remake a limited proportion of it each year.) An idea of the nature of the form and the type of questions asked can be seen from the extract (Figure 11) on page 53.

This project, as with most of our projects, had to be multi-purpose. It is designed firstly for short term information for the course teams, the BBC and the administration, both central and regional, of the University.

For example, we have asked students about their attendance at study centres, a network of 200 of which are available for students to attend over the country, on a voluntary basis. The histogram on page 54 shows the average attendance by faculty over all the weeks of the year and, in addition, the individual highest and lowest week for each faculty. The peak weeks at the beginning were undoubtedly caused by the postal strike, when course materials were delivered via study centres. Later on in the year, summer schools hit the system, then some study

centres closed over the summer and finally students, we suspect, were busy sitting at home revising for examinations! (The Maths Faculty had the additional incentive of needing to go to study centres to use the computer terminals.) The possibility of analysing this information region by region and study centre by study centre is clearly crucial for future decisions about resource allocation.

Open University
Institute of Educational Technology

REPORT FORM ON COURSE UNITS

When filling in this form, please use an ordinary PENCIL, and UNDERLINE appropriate answers BOLDLY. RUB OUT mistakes. DO NOT cross them out.

3. **How did you feel about the amount of work you had to do on the unit?**
   Much too much | Rather too much | Just right | Rather too little | Much too little | Don't know

4. **How difficult did you find the unit?**
   Very difficult | Fairly difficult | Just right | Fairly easy | Very easy | Don't know

5. **How interesting did you find the unit?**
   Very interesting | Fairly interesting | Not very interesting | Not interesting at all | Don't know

6. a) **Did you watch the television component of this unit?** YES NO
   b) **IF YES:**

(a) When did you watch it?	(b) Where did you watch it?
Weekday evening only	At home
Weekend morning only	Other private house
Both	Study centre – live played back
	Other place _

Figure 11

Another fundamental question was to discover how many students were managing to watch and listen to the TV and radio programmes. These figures have been surprisingly and consistently high, although reactions to different programmes, of course, vary.

The two following graphs (Figures 12 and 13) show over a period of ten weeks the viewing and listening figures, faculty by faculty. Science, where TV is advised as compulsory, has consistently the highest viewing figures although not much higher than Social Science. More students, however, watch the Science programmes twice than they do for any other faculty.

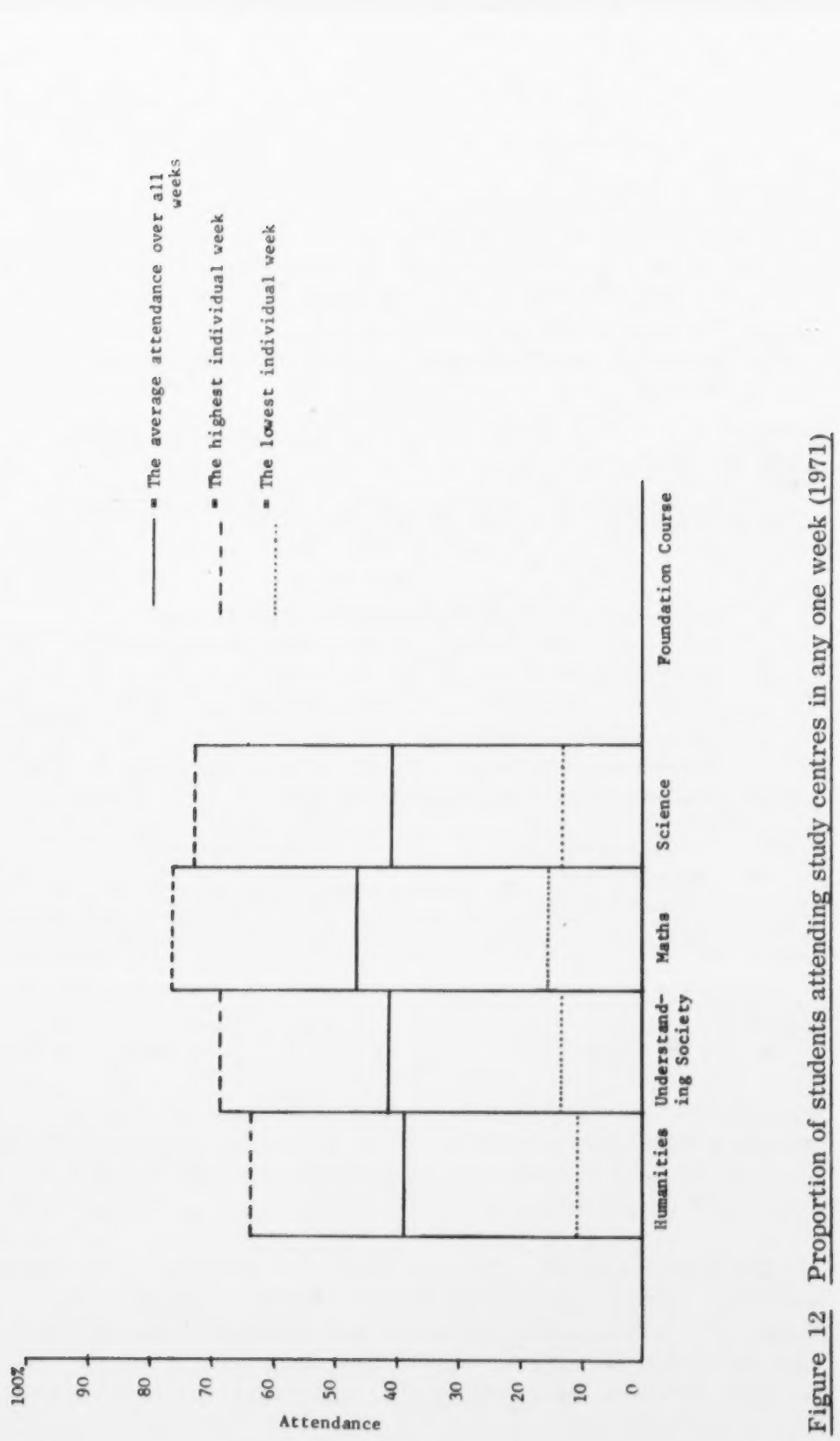


Figure 12 Proportion of students attending study centres in any one week (1971)

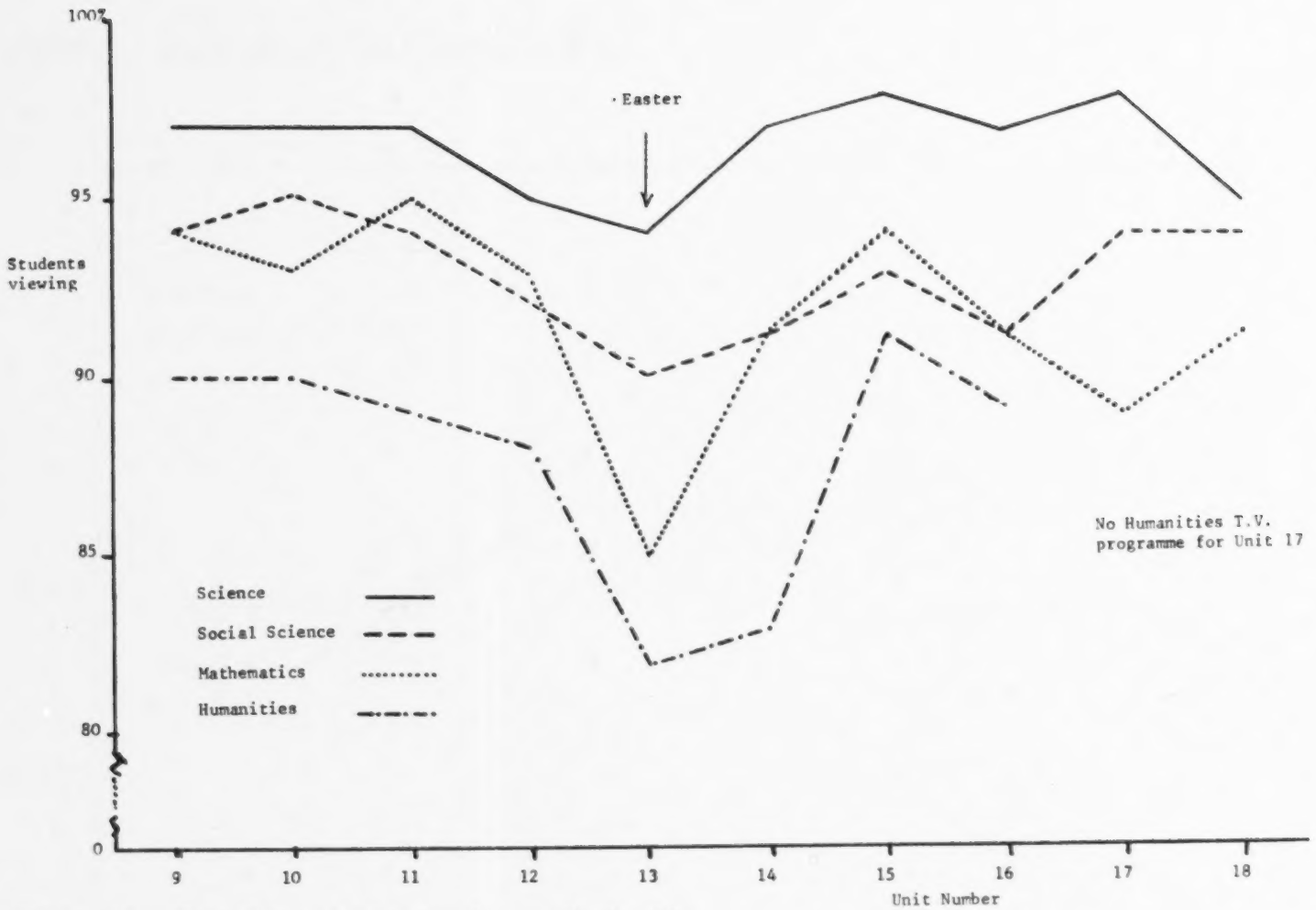


Figure 13 Television viewing levels – units 9 - 18

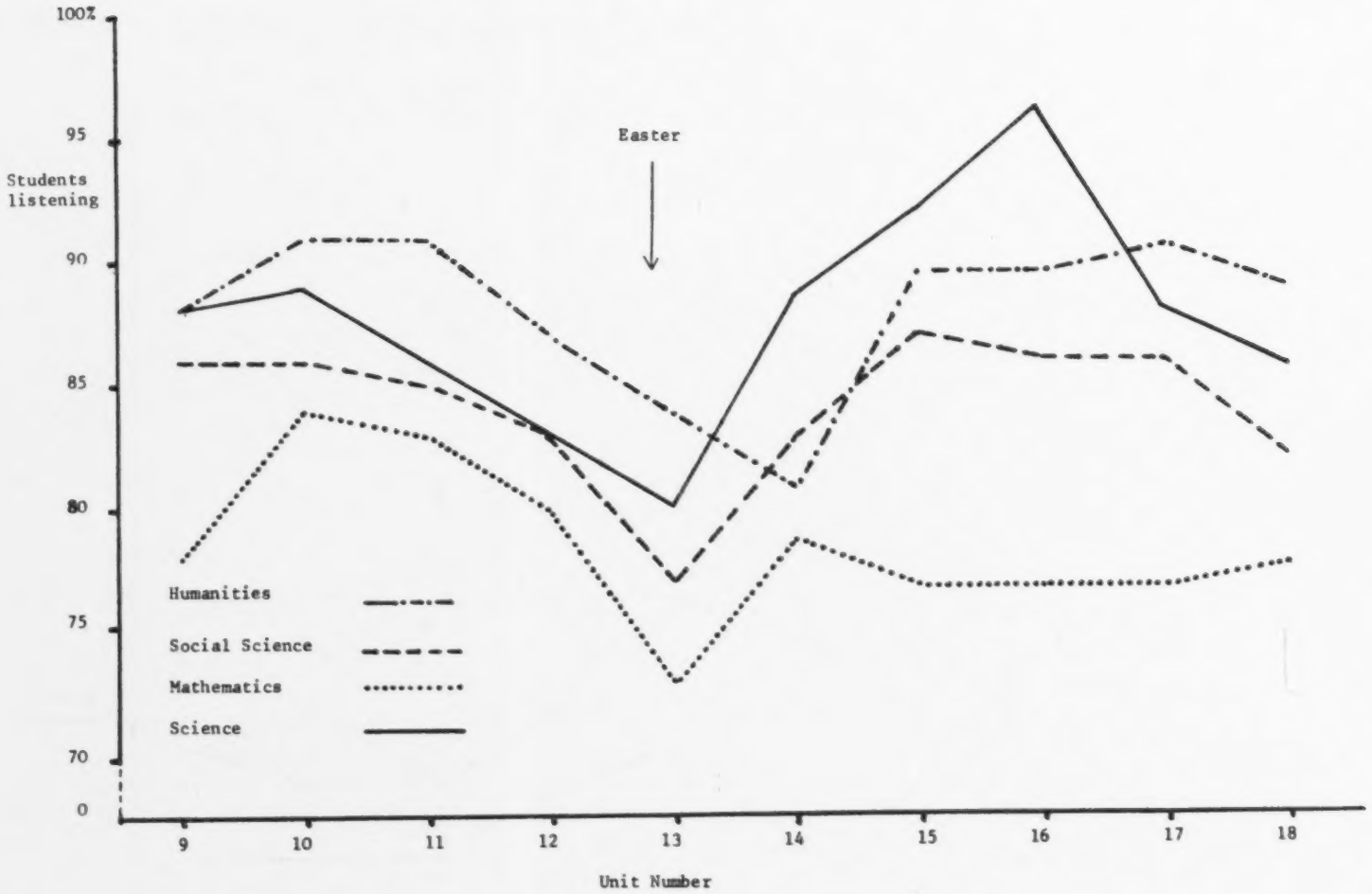


Figure 14 Radio listening levels - units 9 - 18

Radio listening is also high – particularly so for Humanities. This may be a reflection of the fact that slightly more arts students do not have access to BBC 2 and are therefore more concerned to use the medium that is available to them.

One of the most important problems facing both the University and the student was the level at which the work load was pitched. The University aimed at an average of ten hours per course. per week. In the event, students across all faculties have worked longer hours than was anticipated. There is some variation between courses and some variation between units. Over the 11 units shown in the histograms that follow, Understanding Society averaged 11.3 hours and was fairly consistent over its units. Humanities was more varied, but this figure excluded the logic component which averaged about another hour a week.

Maths took consistently more time (an average of 13.1 hours per week) as did science, averaging 14.8 hours. Clearly for both of these courses. this was more time than had been anticipated. With Science some of this was due undoubtedly to home experiments, particularly when students had to unpack and repack their kit after each experiment, due to inadequate study space at home.

These histograms show the <u>average</u> hours spent on each unit across ten weeks of the course, for each of the four foundation courses in 1971.

Looking at one faculty in detail, the Science faculty, it is worth noting the fact that remedial action has already been taken on the basis of this information for 1972's students. Several changes have been made. An example of this is the fact that Unit 10 on this chart has now been spread over two weeks for 1972 and Unit 13 has been made 'optional' material. All units now have a detailed study guide directing students to timetable their work, and telling them which part is essential, which is desirable and which part is optional and so on.

Another major purpose of the course unit reporting system is to allow us, at the end of the year's course, to analyse the study habits of different groups of students, with different patterns of learning and reactions, and see how their study patterns relate to their progress. Have for example, 'high' study centre attenders got consistently higher

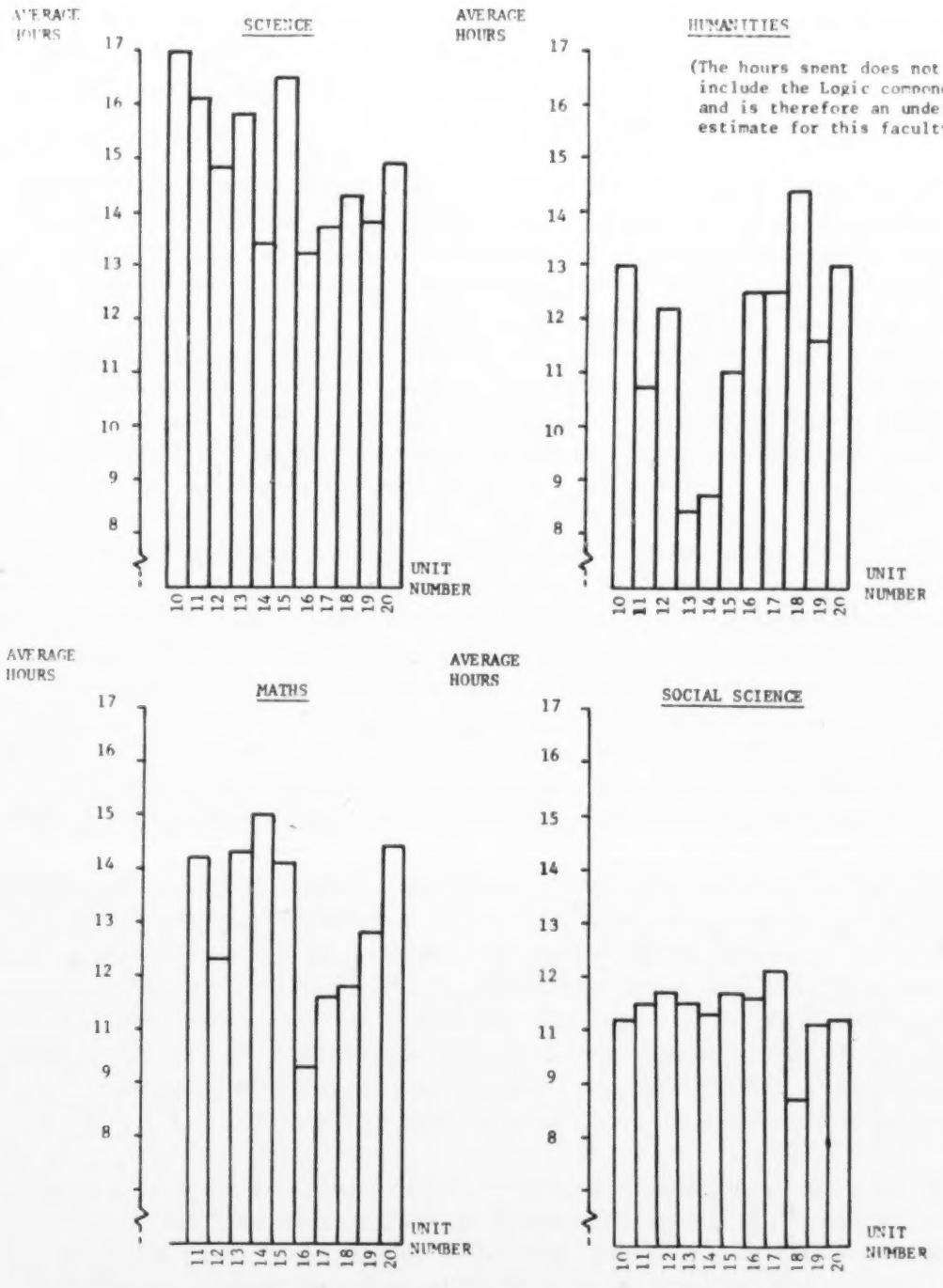


Figure 15 **Average hours spent on course units 10 - 20**

grades than 'low' study centre attenders? How does previous educational experience relate to study patterns and results? Here we are mainly looking for group differences.

A further and more long-term purpose is to individualize the results and see if we can, for individual students, discern a pattern of reactions, multiple indicators, perhaps, of difficulty, interest and time taken on study which may enable us to predict for that student the likelihood of his getting into trouble and needing individual help. A consistent negative correlation, for example, between difficulty and interest might lead to a student withdrawing. If we could, in future years, detect this tendency as it was developing, we might be able to forestall it by action at regional level.

We are involved in a system which has to be continually critical and self-improving if it is to survive. As with all research, each set of results produces some of the answers, but in its turn throws up new problems. We look forward to the day when other institutions are equally involved in such a self-monitoring system. The whole of higher education may benefit.

DISCUSSION

Problems peculiar to the Open University were discussed:

Mrs R.G. Michaels (Hatfield Polytechnic) thought that there was probably an important sex difference to be taken into account in Open University study. At Hatfield a survey of mature women students had indicated that over 90 per cent would prefer to come into the college and have contact with their tutors and other students rather than to study at home. For men who were at work all day the Open University pattern might be a viable one.

The remoteness of the Open University concerned some people.

Dr G.W. Miller (University of London Institute of Education) agreed that the desire for personal contact certainly existed, but felt that it was impossible to meet this desire because of the pressure of numbers.

What mattered for effective teaching, whether the process was by direct personal contact or impersonal TV for instance, was the quality of the teacher. Good teaching on closed circuit TV to large numbers was better than poor teaching in one-to-one tutorials.

Mr C.C. de Winter Hebron (Newcastle Polytechnic) felt that students' preferences in educational method, e.g. for personal contact, should not be ignored unless, as in the case of the Open University, it was definitely impossible to meet them. To brush aside such preferences was bound to have a deleterious effect on the educational process.

Professor L.R.B. Elton (University of Surrey) described briefly the 'Keller' plan, whereby university teaching was carried on more or less on the lines of a correspondence course, with individual assignments and rapid feedback from tutors.

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